

Application No. 10/709,668  
Docket No. 13DV-14039-3  
Amendment dated February 5, 2007  
Reply to Office Action of November 3, 2006

### REMARKS

In the Office Action, the Examiner withdraw all previous prior art rejections, the allowance of independent claim 9 and its dependent claims 10-18, and the allowability of dependent claims 4-8 (which depend from claim 1), and presented the following new prior art rejections under 35 USC §103(a).

- (1) Independent claims 1 and 9 and their respective dependent claims 2, 6, 8, and 10-20 were rejected as being unpatentable over U.S. Patent No. 6,586,115 to Rigney et al. (Rigney) or U.S. Patent No. 6,8098,799 to Darolia et al. (Darolia) in view of U.S. Patent No. 4,676,994 to Demaray, U.S. Patent No. 5,849,371 to Beesley, and U.S. Patent Application Publication No. 2002/0110698 to Singh.
- (2) Independent claim 1 and its dependent claims 2, 19, and 20 were rejected as being unpatentable over U.S. Patent No. 5,334,462 to Vine et al. (Vine) in view of Demaray and Beesley.
- (3) Independent claim 9 and its dependent claims 10, 16, and 17 are rejected as being unpatentable over Vine in view of Demaray, Beesley, and Singh.
- (4) Independent claims 1 and 9 and their respective dependent claims 2, 6, 8, and 10-20 are rejected as being unpatentable over U.S. Patent

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No. 6,669,989 to Movchan et al. (Movchan) in view of Demaray,  
Beesley, and Singh.

Only Demaray, Beesley, and Singh were cited as teaching anything in regard to  
a coating (e.g., EBPVD) apparatus having means capable of interrupting the  
deposition of a coating.

In response to the new rejections, independent claims 1 and 9 have  
been amended to require

means for determining a first time period during which the  
composition of the vapor cloud is such that the relative  
amount of the at least one oxide compound in the vapor  
cloud is greater than the relative amount of the at least one  
oxide compound in the [evaporation source (claim 1) or  
ingot (claim 9)] and for determining a second time period  
that immediately follows the first time period and during  
which the composition of the vapor cloud is such that the  
relative amount of the at least one oxide compound in the  
vapor cloud is approximately equal to the relative amount of  
the at least one oxide compound in the [evaporation source  
(claim 1) or ingot (claim 9)]; . . . .

Support for these amendments can be found in Applicants' Figure 2 and in their  
specification at paragraphs [0021] through [0023], where it is described that a  
coating was chemically analyzed to determine two consecutive periods ( $t_1$  and  
 $t_2$ ) of the coating process that formed the coating, the first ( $t_1$ ) corresponding to  
a region of the coating that was rich in ceria relative to the source material


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evaporated to form the coating, and the second ( $t_2$ ) corresponding to a region of the coating whose ceria content was approximately equal to that of the source material. Applicants believe that none of the prior art of record disclose any means that performs this function, and therefore respectfully request withdrawal of all prior art rejections.

Finally, claim 9 has been further amended to make consistent use of the term "ingot," and claims 16, 18, 19, and 20 have been amended for consistency with their amended parent claims 1 and 9.

Should the Examiner have any questions with respect to any matter now of record, Applicants' representative may be reached at (219) 462-4999.

Respectfully submitted,

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